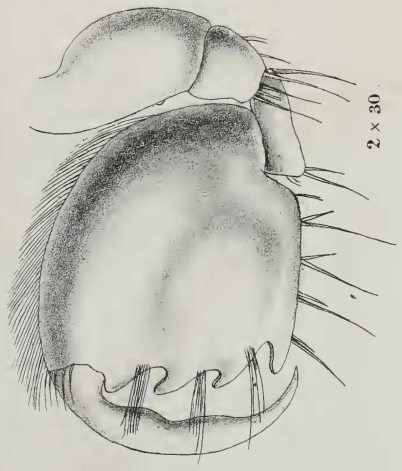


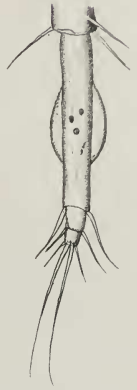
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Part II.—NATURAL SCIENCE.

No. II.—1885.

VII.—*Natural History Notes from H. M.'s Indian Marine Survey Steamer 'Investigator,' Commander ALFRED CARPENTER, R. N., Commanding. No. 2. Description of a new Species of the Amphipod Genus Melita from the Bay of Bengal.—By G. M. GILES, M. B., F. R. C. S., Surgeon-Naturalist, Indian Marine Survey.*

[Received April 21st ;—Read May 6th, 1885.]

(With Plate III.)

The little animal described below was brought up by the hempen tangles from $12\frac{1}{2}$ fathoms near the Mutla Light Ship. When placed in a glass jar, it shewed a tendency to hide itself away amongst the pieces of tangle which remained sticking to some specimens of *Murex spinosa* that had been placed in the jar along with it, and when disturbed escaped by rapid backward jerks.

Two specimens were taken, one slightly larger than the other. The larger was used for dissection and proved to be a female. The smaller was reserved for preservation. Fig. 1. was taken from it. The relative proportions of its parts appeared identical in all respects with those of the larger, with the exception of the propodite and dactylopodite of the second gnathopod, which in the larger specimen exceeded in size that of the smaller to an extent out of all proportion to the difference of their sizes, which were about 5 and 6 mm. respectively. Colour—ivory-white marked with patches of chocolate-coloured pigment.

MELITA MEGACHELES, n. sp.

Body generally depressed rather than compressed. Broadest at the middle of the thorax, thence tapering to head and abdomen.

Head subquadrate, longer than broad, its depth nearly equalling its length, irregularly mottled with chocolate-coloured spots. Eyes situated at the anterior angles of the carapace, compound, prominent, of a coppery violet colour. Antennules hairy, robust, as long as the head and the anterior six segments of the thorax; peduncle three-jointed, middle joint the longest; flagellum as long as the first two joints of the peduncle; a minute appendage, as long as the last joint of the peduncle, with a dilated antepenultimate joint, springs with the flagellum from the peduncle. Antennæ hairy, slightly shorter than the antennules, arising a little below and behind them; peduncle four-jointed, coxocrite short, its antero-inferior angle prolonged into a pointed prominence; third joint the longest, flagellum equals this in length. Mandibles triangular with a long pediform appendage.

Thorax depressed. The posterior three-fourths of each segment decorated with winged patches of madder-brown pigment, except the first and seventh, which are only faintly mottled. Coxal plates considerably less in depth than the segments, decreasing in size from before backwards; the anterior plate quadrangular with its anterior inferior angle prolonged into a beak-like process; the remaining plates foliiform, each with a central patch of pigment. Maxillipedes small, pediform. 2nd pair of appendages (1st gnathopod) very hairy, nearly the smallest of the ambulatory limbs; propodite with palm so vague as to be exunguiculate rather than subchelate. 3rd pair of appendages (2nd gnathopod) of relatively immense size; dactylopodite with its posterior margin entire except for two slight smooth prominences; propodite more than twice as wide as the depth of the thorax, quadrangular, with rounded corners, its inferior border furnished with four large reserrations with three isolated bundles of hairs in the intervals. 4th and 5th pairs of appendages subequal, hairy, exunguiculate, closely resembling each other in every detail, closely approaching in length to 2nd gnathopod. 6th pair of appendages the shortest of the ambulatory limbs; the basipodite having its posterior border strengthened by a lamellar, buttress-like expansion; the dactylopodite forming a strong claw. 7th and 8th pairs of appendages much resembling each other, but the 8th considerably the larger in all points; basipodites with buttresses like the 6th pair of appendages; the dactylopodites forming long strong claws; the eighth is the longest of all the thoracic limbs.

Abdomen somewhat compressed, especially the last four segments, the first two with large pigmented marks, the third faintly blotched, the

last three earthy-brown marked with madder-brown blotches. Anterior three pairs of appendages subequal, of the usual amphipodal swimmeret type. 4th and 5th pairs of appendages robust, biramous, the rami subequal with short, stout, straight spines; the fourth much larger than the fifth. 6th pair of appendages short, stout, internal ramus almost rudimentary, armed, like those of the 4th and 5th, with short, stout, straight spines. Telson nodular with a few short spines.

EXPLANATION OF PLATE III.

Fig. 1. Side view of *Melita megacheles* in natural colours, $\times 25$.

Fig. 2. Distal joints of 2nd gnathopod of the female specimen, $\times 20$ about, *i. e.*, drawn as if belonging to a body on the same scale as fig. 1, to shew the comparative size of these appendages in the two specimens.

Fig. 3. Distal joints of antennular appendage, $\times 275$. In the before-mentioned dilated joint are some highly refractile bodies probably of the nature of otoliths.

Fig. 4. Abdominal appendage of the 6th pair, $\times 60$.

VIII.—*Natural History Notes from H. M.'s Indian Marine Survey Steamer 'Investigator,' Commander ALFRED CARPENTER, R. N., Commanding. No. 3. On the Prothallus of Padina pavonia.*—By G. M. GILES, M. B., F. R. C. S., *Surgeon-Naturalist, Indian Marine Survey.*

[Received April 21st;—Read June 6th, 1885.]

(With Plates IV and V.)

The reproductive process of the genus *Padina* is a subject which has, I believe, been involved in some uncertainty.

The most recent work which I possess that deals at all minutely with the marine algæ is the last edition of the Micrographic Dictionary.

In this only one kind of "spore" is described alternating with tufts of jointed hairs (paranemata) "which Agardh appears to have mistaken for antheridia." This is, I believe, a correct surmise, more especially as I have recently had the good fortune to meet with a body which, there can be little doubt, is the prothalloid or sexual stage of the plant; the stage usually found being non-sexual, like that of fully formed ferns.

To the description of the adult plant, as given in the above-quoted work, there is little or nothing to add; but the spores dropped from its indusia give rise not to a similar form but to an alternate stage possessing both kinds of sexual organs.

Padina pavonia is a weed very common on the coast of British Burmah, growing on rocky spots, more especially in situations where there is a good deal of sand and mud in the interstices of the rocks.